ORIGINAL
(Red)

Site-Specific Health & Safety Plan
For
The Work Being Completed at Quarry No. 4
At
Liberty Property Trust's
2201/2301 Renaissance Boulevard Properties
Upper Merion Township, Montgomery County, PA

Prepared By:

Penn Environmental & Remediation, Inc.
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February 2, 2001 (Original)
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1.0 GENERAL INFORMATION

Corporate Health & Safety Officer: **Christopher Branton, CIH**
Office Number (215) 997-9000
Address: Penn E&R, Inc.
2755 Bergey Road
Hatfield, PA 19440

On-Site Safety Coordinator: **Thomas R. Christie**
Office Number (215) 997-9000
Field Cellular Number (267) 246-1897
Address: Penn E&R, Inc.
2755 Bergey Road
Hatfield, PA 19440

General Contractor: **Steve Walton**
Office Number (610) 431-3500
Field Cellular Number (484) 883-4725
Address: The Norwood Company
530 Brandywine Parkway
West Chester, PA 19380

Primary Contractor: **Mr. Paul Martino**
Office Number (610) 584-6020
Address: Allan A. Myers
P.O. Box 98
Worcester, PA 19490

Site Name: **LPT – 2201 and 2301 Property**

Site Address: City **Upper Merion Township**
County **Montgomery**
State: **Pennsylvania**

Site Contact: **Steve Walton** Phone: **(484) 883-4725**

SCOPE OF WORK:

Liberty Property Trust (LPT) is in the process of developing an office complex on adjoining properties located at 2201 and 2301 Renaissance Boulevard in Upper Merion Township, Montgomery County, PA. As shown on Figure 1, there is a former sand and gravel quarry which was historically filled located in the southeast corner of the 2201 Renaissance property. This quarry is known locally as Quarry No. 4.

As discussed below in detail, as part of the assessment of the materials that were used to fill this quarry, twenty-two soil samples have been collected from the quarry at various depths. Of the twenty-two samples, eight consisted of surface soils (i.e., soils from 0 to 2 feet below the ground surface) and fourteen consisted of subsurface soils (i.e., soils below a depth of 2 feet). Each of the samples was analyzed for the Target Compound List (TCL) volatile and semivolatile organic compounds and the Target Analyte List (TAL) inorganics (i.e., metals and cyanide). Also, eighteen of the samples were analyzed for the TCL pesticides and PCBs.

No compounds of concern were detected above their non-residential direct contact Medium Specific Concentrations (MSC) developed pursuant to Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) in the eight surface soil samples collected from the quarry. Also, with the exception of lead in one sample, no compounds of concern were detected above their Act 2 non-residential direct contact MSC in the fourteen subsurface soil samples. Lead was detected at a concentration of 2,210 milligrams per kilogram (mg/kg) in one of the subsurface samples, which exceeds its Act 2 MSC of 1,000 mg/kg. However, the average lead concentration of 259 mg/kg for all samples collected from Quarry No. 4 is well below its Act 2 direct contact MSC.

As part of the on-site construction activities, limited grading of the surface and excavation into Quarry No. 4 has been or will be completed, and the quarry will be covered with clean soil. In preparation for these construction activities, Penn E&R completed a site-specific risk assessment to determine if lead levels in the soil in the quarry would present an unacceptable risk to on-site construction workers. Based on this assessment, the level of lead in the materials in the quarry will not result in any adverse health effects to on-site construction workers completing the planned soils work on the quarry.

This site-specific health and safety plan outlines the procedures for work within the limits of Quarry No. 4.

BACKGROUND INFORMATION:

History of Quarry No. 4

Existing information suggests that Quarry No. 4 was mined for sand and gravel from sometime in the 1800s until the early 1900s. Based on a review of historical aerial photographs, the quarry was inactive and filled with water between at least 1945 and 1959.

A 1965 aerial photograph shows that Quarry No. 4 was being filled at that time with what appears to be earthen material. Some water may still have been present in the center of the quarry at this time. Between 1965 and 1975, it appears that the quarry was being actively filled with earthen material. By 1980, the quarry appears to have been filled to grade. The 1980 photograph shows that there is vegetation present on the surface of the quarry and there are also dirt access roads present in the central portion of the quarry and along its southeast end. There appears to have been some minor filling/grading taking place on the surface of the quarry in 1985. No activities were evident on the quarry in 1990 or 1995 aerial photographs. By 1995, the

surface of the quarry was covered with vegetation. Based on the above, it appears that fill materials have been in place in the quarry for approximately 35 years.

Results of Soil Samples Obtained from Quarry No. 4

There have been three investigations of the contents of Quarry No. 4 since the early 1990s. The first investigation was performed in 1993 by Pennoni Associates, Inc. (Pennoni). As part of this investigation, Pennoni installed four soil borings in the quarry. These borings were designated PB-1, and PB-3 through PB-5. Boring PB-1 was completed at a depth of 32 feet below the ground surface (BGS), boring PB-3 was completed at a depth of 52 feet BGS, boring PB-4 was completed at a depth of 72 feet BGS, and boring PB-5 was completed at a depth of 52 feet BGS. The approximate locations at which these borings were installed are shown on Figure 1 in Appendix A. The borings were installed using a hollow-stem auger drilling rig. To evaluate the materials within and immediately below the quarry, Pennoni selected and submitted four samples for laboratory analysis. The samples selected for analysis were collected as follows: 1) from 27 to 29 feet BGS in boring PB-1; 2) from 10 to 12 feet BGS in boring PB-3; 3) from 35 to 37 feet BGS in boring PB-4; and 4) from 50 to 52 feet BGS in boring PB-5. The four samples were analyzed for the TCL organics (i.e., volatile and semi-volatile organic compounds and pesticides/PCBs) and the TAL inorganics (i.e., metals and cyanide).

As part of a Remedial Investigation/Feasibility Study (RI/FS) of the Crater site, which was implemented between 1996 and 1999, six additional soil samples were collected from Quarry No. 4. These samples were designated Q4-1 (0 to 0.5 feet BGS), Q4-2 (0 to 0.5 feet BGS), Q4-B-1 (18 to 20 feet BGS), Q4-B-1 (78 to 80 feet BGS), Q4-B-2 (6 to 8 feet BGS), and Q4-B-2 (40 to 42 feet BGS) and were collected from the approximate locations shown on Figure 1 in Appendix A. Soil samples Q4-1 and Q4-2 were collected directly from the surface of the quarry with the remaining four samples collected at depth from two soil borings designated Q4-B1 and Q4-B2. The six soil samples collected as part of the RI/FS were analyzed for the TCL organics (i.e., volatile and semivolatile organic compounds and pesticides/PCBs) and the TAL inorganics (i.e., metals and cyanide).

In 1998, Penn E&R was retained by LPT to complete a further investigation of Quarry No. 4. As part of this investigation, Penn E&R installed eight test trenches and two soil borings in the quarry. The test trenches were designated T-1 through T-8 and the borings SB-1 and SB-2. The test trenches were generally excavated to a depth of 15 feet BGS and borings SB-1 and SB-2 were completed at depths of 69 feet and 82 feet BGS, respectively. These test trenches and borings were installed at the approximate locations shown on Figure 1 in Appendix A. To evaluate the quality of the contents of the quarry, Penn E&R submitted twelve soil samples for laboratory analysis. These samples were designated SB-1 (14 to 16 feet BGS), SB-1 (55 to 57 feet BGS), SB-2 (10 to 12 feet BGS), SB-2 (42 to 44 feet BGS), Q4-T1 (2 feet BGS), Q4-T2 (2 feet BGS), Q4-T3 (2 feet BGS), Q4-T4 (2 feet BGS), Q4-T5 (2 feet BGS), Q4-T6 (15 feet BGS), Q4-T7 (13 feet BGS), and Q4-T8 (2 feet BGS). These twelve samples were analyzed for the TCL volatile and semivolatile organic compounds and the TAL inorganics. In addition, four of the samples (the SB designated samples) were also analyzed for pesticides and PCBs.

The results of the analysis of the twenty-two soil samples collected from Quarry No. 4 as part of the aforementioned investigations are summarized in Table 1 in Appendix B. In evaluating the soil sample analytical data, the results were compared to Act 2 non-residential, direct contact MSCs for surface soils. A discussion of the results of the analysis of these soil samples is provided below.

Volatile Organic Compounds

No volatile organic compounds were detected above their Act 2 non-residential direct contact MSCs in the twenty-two soil samples collected from Quarry No. 4.

Semivolatile Organic Compounds

No semivolatile organic compounds were detected above their Act 2 non-residential direct contact MSCs in the twenty-two soil samples collected from Quarry No. 4.

Pesticides/PCBs

No pesticides or PCBs were detected above their Act 2 non-residential direct contact MSCs in the soil samples obtained from Quarry No. 4.

Inorganics

Metals

With the exception of lead, no metals were detected above their Act 2 non-residential direct contact MSCs in the twenty-two soil samples collected from Quarry No. 4. Only one of the twenty-two samples collected from Quarry No. 4 exhibited lead above its Act 2 non-residential direct contact MSC of 1,000 mg/kg. Moreover, the average lead concentration for samples obtained from Quarry No. 4 of 259 mg/kg is well below its Act 2 non-residential direct contact MSC of 1,000 mg/kg.

Cyanide (total)

Cyanide was not detected above its Act 2 non-residential direct contact MSC in the twenty-two soil samples obtained from Quarry No. 4.

CHEMICAL EXPOSURE:

As indicated above, only one of the twenty-two soil samples collected from Quarry No. 4 exhibited a contaminant above an Act 2 non-residential direct contact MSC. Lead was detected at 2,210 mg/kg in a sample collected from 14 to 16 feet BGS in boring SB-1 (see Figure 1 and Table 1). No other samples displayed lead above its Act 2 non-residential direct contact MSC. Also, none of the eight soil samples collected from the surface of the quarry exhibited any compounds of concern above Act 2 non-residential direct contact MSCs. Based on these

results, surface soils on Quarry No. 4 will not present an unacceptable risk to construction workers grading or placing soil on the surface of the quarry.

Although the average lead level for all the samples collected from Quarry No. 4 of 259 mg/kg is well below its Act 2 non-residential direct contact MSC of 1,000 mg/kg, one subsurface soil sample displayed lead at 2,210 mg/kg. Therefore, to ensure that lead levels in the subsurface soils in Quarry No. 4 do not present an unacceptable risk to on-site construction workers, Penn E&R conducted a focused risk assessment assuming a worst case scenario. That is, Penn E&R assumed that lead was present in the subsurface soils in Quarry No. 4 at a concentration of 2,210 mg/kg. In evaluating the possible worst case scenario, Penn E&R made the following conservative assumptions:

1. Employees would not be exposed to dust concentrations above the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) of 10 mg/m^3 of total dust while on site. Under normal excavating and construction operations, this limit is very rarely exceeded for short periods of time, and almost never exceeded for an entire 8-hour period. In addition, a dust concentration of 10 mg/m^3 would create a significant dust cloud over the entire site. Construction activities being completed at the Site, both within and outside the limits of the quarry, must ensure that this TLV for dust is not exceeded.

2. All of the dust that becomes airborne is assumed to be respirable. This is highly unlikely given that some portion of the dust generated will be too large to inhale.

3. All of the dust generated while working in the quarry would contain the highest possible concentration of lead found in the twenty two soil samples collected from the quarry (2,210 mg/kg). Again, this is highly unlikely given that the average concentration for lead in the soils in the quarry was determined to be 259.33 mg/kg.

Using these worst case assumptions, the highest concentration of airborne lead that personnel could be exposed while working within the limits of the quarry would be 22.1 ug/m^3. This was calculated as follows:

$$\frac{10 \text{ mg soil dust}}{m^3} \times \frac{1000 \text{ ug}}{\text{mg}} \times \frac{2210 \text{ mg lead}}{\text{kg soil dust}} \times \frac{1 \text{ kg}}{1{,}000{,}000 \text{ mg}} = \frac{22.1 \text{ ug lead}}{m^3}$$

(TLV x Conversion x Pb Concentration x Conversion = Concentration)

This calculated airborne lead level of 22.1 ug/m^3, which was developed based on a worst case scenario, is below the OSHA action level of 30 ug/m^3. Therefore, no adverse exposure to on-site construction workers working in the quarry is expected. Also, a more reasonable assessment using the average lead level of 259.33 mg/kg, results in an airborne lead level of 2.59 ug/m^3, which is well below OSHA's action level of 30 ug/m^3.

Based on the information provided above, and our analysis of the soil samples collected from Quarry No. 4, the level of lead in the materials in the quarry would not result in any adverse health effects to on-site worker's completing the planned soil grading/excavation and covering of Quarry No. 4.

In order to ensure that the planned activities do not generate dust in excess of the TLV the following measures were implemented. Additionally, Penn E&R's Site Safety Coordinator will conduct periodic monitoring of all on-site activities. If a sustained visible dust cloud becomes apparent then work will be stopped and appropriate dust control measures will be implemented.

GENERAL SAFETY PRECAUTIONS:

Preconstruction Meeting:

Prior to excavating into Quarry No. 4, Penn E&R met on-site with representatives of LPT's general contractor who was responsible for overseeing all on-site construction activities. We presented to and discussed with Norwood the sampling activities that had been completed in Quarry No. 4. The results of the sampling were relayed to Norwood in a memorandum dated July 27, 1999 and through a letter sent to LPT dated August 5, 1999. The letter to LPT evaluated potential risks to on-site construction worker's and concluded that, even assuming the worst case scenario (i.e., lead was present in the soils in Quarry No. 4 at a maximum concentration of 2,210 mg/kg), the level of lead in the materials in the quarry would not result in any adverse health effects. The letter to LPT recommended that Norwood ensure that the TLV for dust at the site of 10 mg/m^3 was being met.

Site Inspections:

As part of previous and the on-going construction activities, Penn E&R makes periodic site visits to evaluate the on-site construction activities. The primary objective of these site visits is to ensure that dust emissions are being properly controlled. If at any time a sustained visible dust cloud becomes apparent then work will be stopped and appropriate dust control measures will be implemented.

As indicated earlier, the primary construction activities planned for Quarry No. 4 include the grading of the surface of the Quarry and then the covering of the quarry with clean soil. As indicated above, no contaminants of concern were detected above Act 2 non-residential direct contact MSCs in the surface soils on the quarry. Therefore, these activities, which constitute a majority of the construction activities planned for the quarry, will not present an unacceptable risk to on-site construction workers.

With the exception of the installation of a sanitary sewer line through a portion of the Quarry, very little, if any, excavation into the quarry will be required. During the installation of the sanitary sewer line, a Penn E&R OSHA-certified inspector was on-site to oversee all excavation activities and to ensure that dust levels were maintained at acceptable levels. As part of the installation of this sewer line, about 500 tons of soil was excavated from the quarry. As

indicated to Ms. Andrea Lord at the USEPA during a meeting on June 25, 1999, during which the construction plans for the 2201 property were presented and discussed, we indicated that any materials removed from the quarry would be transported off-site for disposal at a properly permitted facility. As such, this material was characterized and subsequently shipped off-site for disposal at Waste Management's Pottstown, PA landfill. As part of the characterization process, one composite sample of the excavated materials was collected. This sample was analyzed for, among other compounds, lead. No compounds of concern, including lead, were detected above their Act 2 non-residential direct contact MSCs in this sample. Lead was detected at a concentration of 71 mg/kg. At this concentration, the presence of lead in the excavated materials would not present at unacceptable risk to on-site construction workers, which is consistent with what previous sample results indicated.

Personal Protective Equipment: Hard hats and work boots will be worn on-site at all times. All dust generated during the excavations activities must be kept to a minimum.

Housekeeping: All work areas will be maintained in an orderly manner.

Fire Protection: All fuel for heavy equipment will be stored in appropriate containers.

First Aid and Medical Attention: Montgomery Hospital will provide emergency medial attention.

Tools: All tools and equipment must be in good working order and fully comply with all OSHA Safety Rules and Health Regulations for the construction industry. All equipment must be inspected on a daily basis to ensure that they meet these requirements.

Heavy Equipment: All heavy equipment will be inspected on a daily basis to ensure that it is in good working order. All equipment must be operated by qualified operators.

Excavations: All excavations must be in accordance with OSHA regulations. All excavations must be secured at the end of each day to prevent non-employees from falling into the excavation.

Dust Suppression: If any visual signs of dust are generated during excavation or grading activities in Quarry No. 4, work will be immediately stopped. Appropriate measures to eliminate visual dust emissions such as wetting the soils prior to excavation, will be implemented before on-site activities can again be initiated.

2.0 HAZARD SUMMARY

Apparent Hazard		Type of Facility		Status of Facility	
Serious	_____	Mfg.	_____	Active	X
Moderate	_____	Dump	_____	Inactive	_____
Low	X	Landfill	_____	Unknown	_____
None	_____	Open	_____		
Unknown	_____	Warehouse	_____		
		Gasoline Service Station	_____		
		Other	**Office Building Complex and Filled Quarry**		

Waste Type (s)		Waste Characteristics		Type/Form of Hazard	
Gas	_____	Toxic	_____	Dust	X
Liquid	_____	Corrosive	_____	Liquid	_____
Sludge	_____	Ignitable	_____	Fumes	_____
Solid	X	Volatile	_____	Vapors	_____
Unknown	_____	Radioactive	_____	Contact	_____
Other	Soil	Reactive	_____	Respiratory	_____
		Unknown	_____	Other	_____
		Other	Low Levels of Lead in Soils	IDLH	_____

3.0 PERSONAL PROTECTIVE EQUIPMENT

Level of Protection: A _____ B _____ C _____ D __X__

Tasks to be Performed:

The primary construction activities planned for Quarry No. 4 include the grading of the surface of the Quarry and then the covering of the quarry with clean soil. As indicated above, no contaminants of concern were detected above Act 2 non-residential direct contact MSCs in the surface soils on the quarry. Therefore, these activities, which constitute a majority of the construction activities planned for the quarry, will not present an unacceptable risk to on-site construction workers. With the exception of the installation of a sanitary sewer line through a portion of the Quarry, very little, if any, excavation into the quarry will be required. As indicated earlier, an OSHA-certified inspector from Penn E&R monitored these excavation activities.

4.0 MONITORING /SURVEILLANCE EQUIPMENT

HNU/PID	_____	Metal Detector	_____
OVA/GC	_____	Explosimeter	_____
Drager Tubes	_____	O_2 Detector	_____
Tri-Tector	_____	Radiation Survey Meter	_____

Notes:

In order to ensure that the planned construction activities on Quarry No. 4 do not generate dust in excess of the TLV, Penn E&R's Site Safety Coordinator will complete periodic site inspections. If dust is being generated above the TLV, work will be immediately stopped and appropriate dust control measures will be implemented.

5.0 EMERGENCY PHONE NUMBERS

Local Emergency Phone Numbers	Location	Phone	Notified
Fire	Unknown	911	
Police	Unknown	911	
Ambulance	Unknown	911	
Hospital	Montgomery Hospital, 1301 Powell Street, Norristown		
	610-270-2000 (general) or 610-270-2060 (emergency)		

Chemical trauma capability? Yes

DIRECTIONS TO HOSPITAL (Map is attached as Appendix C).

Route Verified by **Sean M. Gallagher**

Go out of the main entrance for the 2201 Property onto Horizon Drive. Follow Horizon Dr. to Church Street. Make a left onto Church Street and proceed to Henderson Road. Make a right onto Henderson Road and proceed to Rt. 202. Make a right onto Rt. 202 north towards Norristown. After crossing bridge into Norristown, proceed straight on Markley Street. At fourth traffic light, make a right onto Fornance Street. Proceed to next light and make a right onto Powell Street. The hospital is located at the intersection of Powell and Fornance Streets.

Additional Emergency Phone Contacts

PECO	(800) 841-4141
Chemtrec	(800) 424-9300
TSCA Hotline	(800) 424-9065, (202) 544-1404
AT&F (explosives info.)	(800) 424-9555
National Response Center	(800) 424-8802
Pesticide Information Service	(800) 845-7633
RCRA Hotline	(800) 424-9346
CMA Chemical Referral Center	(800) 262-8200
National Poison Control Center	(800) 942-5956
U.S. DOT	(202) 366-0656 (Day Only)
PADEP	(610)-832-6000
U.S. EPA Hotline	(800) 424-9346

6.0 SAFETY EQUIPMENT CHECKLIST

(Check equipment needed)

Personal Protection

_____	Respirator
	Cartridges
_____	Type
__X__	Safety Boots
_____	Rubber Boots
_____	Coveralls (tyvek)
_____	Coveralls (cotton)
__X__	Hard Hat
_____	PVC Rain Gear
_____	Safety Glasses
_____	Nitrile/Latex Gloves
_____	Viton Gloves
_____	Disposable Booties
_____	Disposable Gloves
__X__	Hearing Protection (when sound levels exceed 90 DBA)
_____	SCBA
_____	Cascade System

Monitoring and Surveillance

_____	Radiation
_____	O_2
_____	OVA
_____	Explosimeter
_____	HNU
_____	TLD Badges
_____	Metal Detector

Decon Equipment

_____	Tub
_____	Water
_____	Garbage Can w/ Liner
_____	Bucket
_____	Plastic Garbage Bags
_____	Detergent
_____	Hand Soap

Miscellaneous

First Aid Kit	__X__
Water	_____
Fire Extinguisher	_____

Other (specify)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

7.0 GENERAL SAFETY RULES AND REGULATIONS

Safety of all employees and subcontractor personnel is our number one goal.

1. PERSONAL PROTECTIVE EQUIPMENT:

   a. Hard hats must be worn at all times on the job.

   b. If required, safety glasses and/or applicable added face protection must be worn at all times on the job.

   c. The wearing of safety shoes is required. The wearing of canvas shoes, moccasins, loafers, house slippers, or any open-toed shoes on the job is prohibited.

   d. Approved hearing protection must be provided in posted high noise level areas.

   e. Approved respirators must be worn in areas of harmful dusts, gases, mists and vapors. (Consult Corporate Health and Safety Officer when in doubt).

   f. Safety belts, lanyards, lifelines and/or safety nets must be utilized in accordance with federal standards.

   g. Employees must be properly clothed for their work. Full-length trousers and long sleeve shirts are required in all areas.

   h. Hair length must conform to the safety requirements of the respective jobs and work areas.

2. HOUSEKEEPING:

   a. All work areas, passageways and walkways must be maintained in an orderly manner.

   b. Waste of all kinds, including empty bottles, shall be placed in proper containers provided for same.

   c. Scrap lumber must be piled orderly and projecting nails must be pulled or bent over to eliminate a hazard.

3. FIRE PROTECTION AND PREVENTION:

a. "NO SMOKING" must be observed throughout the job site except in designated areas.

b. All combustible or flammable materials must be stored, dispensed and used properly.

c. Adequate fire protection and prevention must be maintained on-site.

4. FIRST AID AND MEDICAL ATTENTION:

a. First aid and medical attention will only be provided by persons with valid first aid training from the U.S. Bureau of Mines, the American Red Cross or equivalent training that can be verified by documentary evidence on the Site. In case of an emergency the local emergency service will be contacted to provide emergency medial attention.

5. HANDLING AND STORAGE OF MATERIALS:

a. Materials must be stocked, racked, blocked, or otherwise secured to prevent sliding, falling, or collapse.

b. Rigging equipment must be used properly and inspected.

c. Safe working load must be marked clearly on all hoists, slings, chains, etc.

6. TOOLS (HAND, POWER - AND POWER-ACTUATE):

a. All mechanical safeguards must be in use.

b. All tools must be grounded properly or double insulated.

c. All tools must be inspected and maintained properly including cords and wiring.

d. All licensing laws and ordinances must be complied with.

7. ELECTRICAL:

a. All electrical wiring and equipment must comply with NFPA, NEC and ANSI standards.

b. All electrical wiring will be inspected daily to for any defects.

8. LADDERS AND SCAFFOLDS:

a. All ladders and scaffolds (including ropes and cables) must be inspected regularly and maintained in good condition.

b. Scaffolds must be provided with guard-rails, mid-rails, and toe-boards.

c. Straight ladders must be provided with safety feet and properly secured to prevent slipping, falling or sliding.

9. FLOOR AND WALL OPENINGS AND STAIRWAYS:

a. All must be guarded properly.

b. All stairs or platforms having four or more risers must be guarded by standard stair rail.

c. Open-sided platforms six feet above the ground or floor must be guarded.

10 CRANES, DERRICKS AND HEAVY EQUIPMENT:

a. All equipment must be maintained properly and inspected including cables, sleeves, slings, chains, hooks, eyes and the posting of load capacities, hand signals, operating speeds, and special instructions.

b. Where applicable, approved rollover protection must be provided for graders, dozers, fork lifts, scrapers, tractors, etc.

c. Noise arresters and back-up alarms must be provided, and operational.

11. MOTOR VEHICLES:

a. All motor vehicles must have qualified operators.

b. All vehicles must be inspected and maintained regularly and weigh limits and load sizes controlled.

12. EXCAVATIONS - SHORING, TRENCHING AND FORMS:

a. Ladders, barricades, shoring, forms, ramps, etc., must be in accordance with OSHA regulations.

13. SIGNS AND TAGS:

a. Signs that warn of hazards must be visible and posted properly.

b. Accident prevention tags must be used as a temporary means of warning employees of an existing hazard.

14. EXPLOSIVE BLASTING:

a. State regulations must be observed.

b. Prior approval must be obtained from the Safety and Industrial Hygiene Department and the appropriate Operating Superintendent.

15. FLAMMABLE GASES AND LIQUIDS:

a. Proper storage practices must be maintained.

b. Fire protection must meet all standards for storage areas.

c. All containers and storage areas must be identified properly.

The following regulations must be complied with:

1. Permit for Cutting and Welding with Gas or Electric Equipment.

2. Permit for Entering Tank, Manhole, Pipeline, Pit, or Closed Vessel.

3. Railroad and Blue Flag Regulations.

4. Fire Boxes and Alarms.

5. Mobile Equipment Operating Rules.

6. Electrical Lockout Procedure.

8.0 CONSTRUCTION ACTIVITIES

All portions of the surface of Quarry No. 4 that have been or are going to be disturbed by construction activities have been covered with several feet of clean soil. Therefore, on-site construction workers will not come in contact with materials in Quarry No. 4.

A portion of a stormwater detection basin being constructed on LPT's 2301 property will cover a small portion of the western end of Quarry No. 4. The construction of this basin, which will include the placement of clean soil over a portion of Quarry No. 4 to form the basin, will be completed from approximately April 23, 2001 to May 25, 2001.

No further intrusive work into the quarry is expected. If such is required, the On-Site Safety Coordinator will notify the EPA and will ensure that the requirements of this Health and Safety Plan are fully implemented.

9.0 CONTINGENCY PLAN

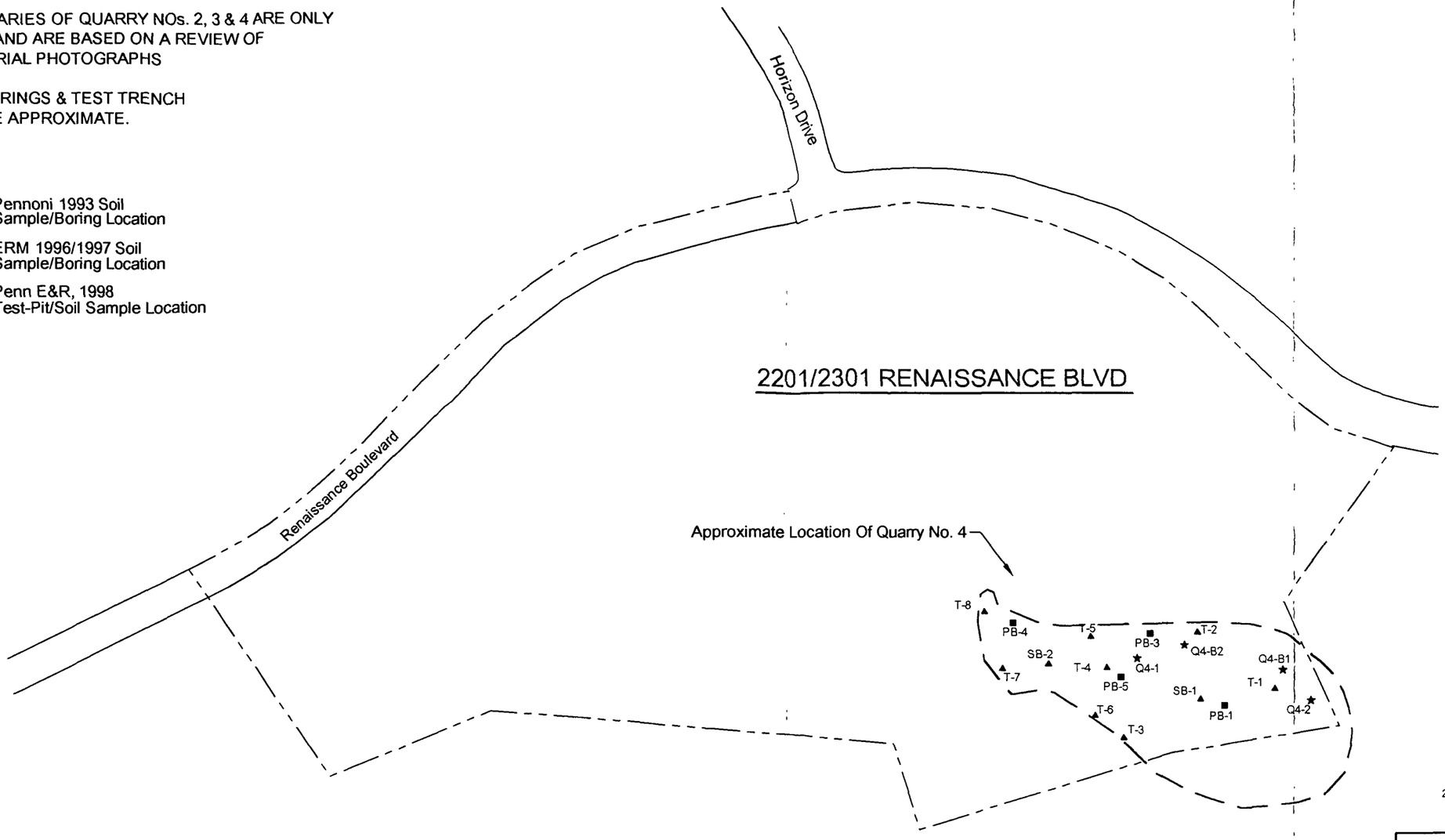
Penn E&R's Health and Safety Coordinator will be on-site during all intrusive earth moving activities. If any signs of potential contamination are observed, work in that area will be immediately stopped and all workers removed from the area. The potential area of concern will then be secured with a temporary fence. The EPA Remedial Project Manager will be alerted to the presence of the potential area of concern. A plan to investigate the potential area of concern will then be developed and submitted to the EPA. Only OSHA-trained personnel will be allowed access to the area until appropriate investigations have been performed, a plan of action to remediate any contamination, if such is required, has been implemented, and clearance has been received from the EPA.

NOTE:
(1) THE BOUNDARIES OF QUARRY NOs. 2, 3 & 4 ARE ONLY APPROXIMATE AND ARE BASED ON A REVIEW OF HISTORICAL AERIAL PHOTOGRAPHS

(2) THE SOIL BORINGS & TEST TRENCH LOCATIONS ARE APPROXIMATE.

LEGEND (2)

■ PB-4	Pennoni 1993 Soil Sample/Boring Location
★ Q4-1/Q4-B1	ERM 1996/1997 Soil Sample/Boring Location
▲ SB-1/T-7	Penn E&R, 1998 Test-Pit/Soil Sample Location



Graphical Scale

200' 100' 0 200'

1"=200'

Figure 1

Site Map For 2201/2301 Renaissance Blvd. Showing Limits of Quarry No. 4 and Soil Sample Locations

Renaissance Park
Upper Merion Township
Montgomery County, Pennsylvania

DRAWN BY	DATE.	SCALE
SMD	10-Jan-01	1"=200'±

Penn E&R
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TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR
SOIL SAMPLES COLLECTED IN QUARRY #4

ANALYTICAL PARAMETERS	SAMPLE DESIGNATION/ANALYTICAL RESULTS[1]																					PADEP NRDC MSC[2] (Surface Soils)
	PENNONI SAMPLES				RI/FS SAMPLES						PENN E&R SAMPLES											
	PB-1-27-29	PB-3-10-12	PB-4-35-37	PB-5-50-52	Q4-1 0-0.5	Q4-2 0-0.5	Q4-B-1 18-20	Q4-B-1 78-80	Q4-B2- 6-8	Q4-B2 40-42	SB-1-14-16	SB-1-55-57	SB-2-10-12	SB-2-42-44	Q4T1-2	Q4-T2-2	Q4-T3-2	Q4-T4-2	Q4-T5-2	Q4-T6-15	Q4-T7-13	Q4-T8-2	
Volatile Organics: [3]																						
Methylene Chloride	ND	ND	ND	ND	0.013U	0.015U	0.005B	0.005B	0.003B	0 002B	NA	0 003JB	NA	0 003JB	0 013JB	0 012JB	0 012JB	0.01JB	0 012JB	0 012JB	0 015B	0 010JB	3,500
Acetone	1 1	0 096	0 044	0 025	0 013U	0 015U	0 53J	0 012U	0 014J	0 012U	NA	<0 013	NA	<0 012	0.03	<0 012	<0 013	<0.012	0 013J	<0 012	0.033	0.038	10,000
Trichloroethene	ND	ND	ND	ND	0 013U	0 015U	0 066	0 012U	0.012U	0 012U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	970
Tetrachloroethene	ND	ND	ND	ND	0 013U	0 015U	0 059	0 012U	0.012U	0 012U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,500
Toluene	ND	ND	ND	ND	0 013U	0 015U	0.076	0 012U	0.012U	0 012U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Ethylbenzene	ND	ND	ND	ND	0 013U	0 015U	0 02	0 012U	0 012U	0 012U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Xylenes (total)	ND	ND	ND	ND	0 013U	0 015U	0.14	0 012U	0 012U	0 012U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Semivolatile Organics: [3]																						
Acenaphthene	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	<0.38	<0 440	<0 36	<0 4	<0 42	<0.41	<0.42	<0 38	<0 46	<0 4	0 23J	<0 43	170,000
Anthracene	0 51	1	ND	ND	ND	ND	ND	ND	ND	ND	0.059J	<0 440	0.038J	<0.4	<0 42	<0.41	<0 42	<0 38	<0 46	0 043J	0.078J	<0 43	190,000
Benzo(a)anthracene	0 61	2 8	ND	ND	0 098J	0.110J	0 410U	0 410U	0 110J	0 810U	0.22J	<0 440	0.10J	<0.4	0 052J	<0.41	0 047J	<0.38	<0 46	0 14J	0 51	0.12J	110
Benzo(b)fluoranthene	0 44	2.1	ND	ND	0 150J	0 270J	0.410U	0 410U	0 110J	0 810U	0.26J	<0 440	0 11J	<0 4	0.082J	0.056J	0 062J	0 066J	<0 46	0 14J	1 2	0 28J	110
Benzo(k)fluoranthene	0 39	1 8	ND	ND	0 060J	0.057J	0.410U	0.410U	0.096J	0 810U	0.068J	<0 440	<0.36	<0 4	<0.42	<0 41	<0 42	<0.38	<0 46	<0 4	0 34J	0 063J	1,100
Benzo(g,h,i)perylene	0 41	1.5	ND	ND	0.064J	0.100J	0 410U	0.410U	1.6U	0 810U	0.14J	<0 440	0.052J	<0.4	<0.42	<0.41	<0 42	<0.38	<0.46	0.046J	1	0.20J	170,000
Benzo(a)pyrene	0 53	0.24	ND	ND	0.120J	0 093J	0.410U	0 410U	0.099J	0 810U	0 18J	<0.440	0 059J	<0 4	<0.42	<0.41	<0 42	<0 38	<0 46	0 059J	0.93	0 16J	11
Bis(2-ethylhexyl)Phthalate	ND	ND	ND	ND	0 440U	0 480U	0.027J	0 410U	0.280B	0 140B	0 11J	<0.440	0 37	0.23J	<0 42	<0.41	<0.42	<0 38	<0 46	<0 4	0 29JB	<0 43	5,700
Carbazole	ND	0 71	ND	ND	ND	ND	ND	ND	ND	ND	0.37J	0.13J	<0 36	<0.4	<0 42	<0 41	<0.42	<0 38	<0 46	<0 4	0.086J	<0 43	NSA
Chrysene	0 6	3 1	ND	ND	0.090J	0 220J	0.410U	0.410U	0 140J	0 810U	<0.38	<0.440	0 17J	<0 4	0 090J	<0.41	0.11J	0.071J	<0 46	0 23J	0 57	0.18J	11,000
Dibenzo(a,h)anthracene	ND	0.99	ND	ND	ND	ND	ND	ND	ND	ND	0 24J	<0 440	<0.36	<0.4	<0 42	<0 41	<0.42	<0.38	<0 46	<0 4	0 34J	0 052J	11
Dibenzofuran	0 38	0.76	ND	ND	ND	ND	ND	ND	ND	ND	0.048J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NSA
Di-n-butylphthalate	ND	ND	ND	ND	0 440U	0 480U	0 190J	0.410UJ	1.6U	0 810U	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Di-n-octylphthalate	ND	ND	ND	ND	0.440U	0 480U	0.410U	0.410U	1 6U	0 002J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Fluoranthene	1.6	9	ND	ND	0.140J	0 290J	0.410U	0.410UJ	0.160J	0 810U	ND	<0.440	0 25J	0.072J	012J	0 059J	0.12J	0.068J	<0.46	0 34J	0 47	0 14J	110,000
Fluorene	0.54	1.2	ND	ND	ND	ND	ND	ND	ND	ND	<0.38	<0.440	<0.36	<0.4	<0.42	<0 41	<0.42	<0 38	<0 46	<0 4	<0.45	<0 43	110,000
Indeno(1,2,3-cd)pyrene	ND	1.5	ND	ND	0.074J	0.097J	0.410U	0 410U	0 090J	0 810U	0.14J	<0.440	0.038J	<0.4	<0 42	<0.41	<0.42	<0 38	<0 46	<0 4	1.2	0.15J	110
2-Methylnaphthalene	ND	0.4	ND	ND	ND	ND	ND	ND	ND	ND	<0 38	<0 440	<0 36	<0.4	0.043J	<0 41	<0 42	<0.38	<0.46	<0 4	<0.45	<0.43	10,000
4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0 38	0 19J	<0 36	<0.4	0.042J	<0 41	<0 42	<0.38	<0.46	<0 4	<0.45	<0.43	NSA
Naphthalene	0.71	0 48	ND	ND	0.440U	0.480U	0.059J	0 410UJ	1 6U	0 810U	<0 38	<0 440	<0 36	0.046J	<0 42	<0 41	<0 42	<0.38	<0.46	<0 4	<0.45	<0.43	110,000
Phenanthrene	2.1	12	ND	ND	0 053J	0 120J	0.410U	0.410UJ	0 120J	0 810U	0 24J	<0.440	0.16J	0.051J	0.11J	<0 41	0 079J	0.045J	<0 46	0 21J	0 16J	0.047J	190,000
Pyrene	1 6	10	ND	ND	0.140J	0 300J	0.410U	0 410U	0 150J	0 810U	0 35J	<0.440	0 28J	0 074J	0.095J	0 056J	0 15J	0.059J	<0 46	0 36J	0 52	0.15J	84,000
Pesticide/PCBs: [3]																						
Gamma-BHC(Lindane)	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.00026	<0.0023	<0.0019	<0.002	NA	NA	NA	NA	NA	NA	NA	NA	72
Dieldrin	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0 00033	<0.0044	<0.0036	<0 004	NA	NA	NA	NA	NA	NA	NA	NA	5
4,4'-DDE	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.01	<0.0044	<0 0036	<0 004	NA	NA	NA	NA	NA	NA	NA	NA	230
Endrin	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.0013	<0 0044	<0 0036	<0.004	NA	NA	NA	NA	NA	NA	NA	NA	840
Endosulfan II	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.00083	<0 0044	<0 0036	<0 004	NA	NA	NA	NA	NA	NA	NA	NA	17,000
4,4'DDD	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.03	<0 0044	<0 0036	<0.004	NA	NA	NA	NA	NA	NA	NA	NA	330
Endosulfan Sulfate	ND	ND	ND	ND	NA	NA	0 00085J	0.0082U	0 004U	0 004U	0 00019	<0.0044	<0 0036	<0.004	NA	NA	NA	NA	NA	NA	NA	NA	17,000
Heptachlor Exposide	ND	ND	ND	ND	NA	NA	0 0042U	0.0042U	0.0044J	0 0021U	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	9
Methoxychlor	ND	ND	ND	ND	NA	NA	*0 0018J*	*0 0013J*	*0.021U*	*0 021U*	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	14,000
4,4'-DDT	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0 0056	<0 0044	<0 0036	<0 004	NA	NA	NA	NA	NA	NA	NA	NA	230
Alpha-Chlordane	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0.0017	<0 0023	<0 0019	<0.002	NA	NA	NA	NA	NA	NA	NA	NA	61
Gamma-Chlordane	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	0 0026	<0 0023	<0 0019	<0 002	NA	NA	NA	NA	NA	NA	NA	NA	61
Aroclor-1248	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	<0 038	<0 044	0 058	<0 04	NA	NA	NA	NA	NA	NA	NA	NA	44
Aroclor-1254	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	<0 038	<0 044	0 043	0 015	NA	NA	NA	NA	NA	NA	NA	NA	44
Inorganics: [3]																						
Aluminum	3,610	12,400	2,360	1,100	11,600	8,240	9,800	3,470	22,600J	310J	9700	12600	3000	2620	6890	11000	6020	4800	9510	4400	13300	9380	190,000
Antimony	ND	ND	ND	ND	0 45UL	2.0B	1.7UL	1 7UL	2.7B	1 7U	<0 46	<0 53	0 48B	<0.48	<0 51	<0 50	2.8B	<0 47	<0.56	2.0B	<0 55	<0 52	1,100
Arsenic	0 8	5 3	ND	ND	7.0	12.2	8.2L	15 7L	17.7	2.1L	6.2	9.1	8 3	2.9	6	20.1	15 3	10 5	5 2	10	20.6	6 8	53
Barium	10 3	122	15 8	1 9	96 0	102	46.8	155	743	3 0B	236	43.8B	40.3B	37 6B	64.5	109	98.4	99 2	53 8B	70.3	71.4	85.5	190,000
Beryllium	0.61	2.3	6 1	ND	0.88B	0 95B	1.9	4 5	4.0	0 20B	1 2	2.4	0 78B	1 1B	1.3	0.92B	1.2B	0.98B	0 76B	0 97B	1.2B	0 99B	18
Cadmium	ND	2.3B	1 8B	ND	0.53B	2.6	0.11L	2.3L	3.1	0 10U	0.68B	<0.16	<0.13	<0 14	0.50B	0.51B	<0.15	<0 14	0 29B	2 4	0.60B	0 46B	1,400
Calcium	388	35,800	469	299	4,840	23,400	22,900	407	83,600J	361B	44500	1560	24100	4490	4890	8280	40000	38500	2010	56600	8970	3140	NSA
Chromium	14 5	23 4	23 3	10 7B	20 8	331	13 3	2.9	21 8	1 1B	25 3	17.5	56.2	29 2	11	33.4	58.9	110	15	486	17 3	18 2	190,000
Cobalt	4 4	12.5	14 1	ND	9 5	13 6	12.6J	74.5J	9 9L	1 2B	10 4B	19.3	9 2B	10 4B	10.8B	9.6	6 7B	8 4B	7.1B	8 8B	369	30 8	170,000
Copper	15 8	40.4	37	5.5B	23 0	106	20 2	49.5	64 9	1 9B	35.7	47 9	161	41 7	47 7	66 9	67 7	202	21.7	117	39	34 1	190,000
Iron	24,400	42,000	58,300	2,830	23,000	113,000	27,500	93,100	37,600J	806J	27200	46300	160000	67300	27000	31400	157000	126000	21600	98000	23800	20500	190,000
Lead	23	220	43	5	81 4	333	11.9	46 2	580J	4 4B	2210	28 6	219	78.7	45.6	79 6	430	345	144	594	79.9	103	1,000
Magnesium	440	17,000	259	149	3,670	8,580	14,200	498	13,800J	91 8B	18700	1350	12300	2110	4030	2860	13100	9920	1250B	15000	1860	2120	NSA
Manganese	28 8B	1,130	96.1	7.5B	678K	6,200K	590	3,210	2,040J	5 4J	656	405	1150	439	821	749	2770	3940	336	5280	2270	2080	130,000
Mercury	ND	0.15	ND	ND	0 13U	0 29K	0 06U	0 06U	0 06UL	0 06UL	0 14	<0 13	<0 11	<0 12	<0 13	0 13	<0.13	<0 12	<0 14	<0 12	0 52	<0 13	240
Nickel	6 1B	24 3	17 4B	ND	15 2J	53 6J	17 7K	239	22.1	0 43L	17 6	35.4	37 5	14.6	18	16 4	14	26 2	11 4	26 2	27 5	15 6	56,000
Potassium	311	2,490	295B	66 1B	792	1,090B	576	350	3,070	245U	1900	543B	430B	460B	759B	2340	437B	780B	563B	732B	533B	514B	NSA
Selenium	ND	ND	ND	ND	1 2U	1 4U	0 57UL	0.72L	2.8U	0 56U	0 66B	0 88B	7	1 3	<0 68	0 93B	13 3	9 2	<0 76	5	1 6	<0 70	14,000
Silver	ND	ND	ND	ND	0 12UL	0 14UL	1 2L	5 5L	4.7L	0 05UL	<0 14	<0 16	0 59B	<0 14	<0.15	<0 15	0 99B	0 87B	<0.17	1 3B	<0 16	<0 15	14,000
Sodium	28 8B	222B	ND	50.1B	145UL	310L	247U	249U	4,250	245U	<45 0	<52.7	<43 2	<47 3	<50 0	240B	<49 7	<45.9	117B	<47 6	<54 0	121B	NSA
Thallium	ND	ND	ND	0 56B	1 2B	6 1B	0 82B	0 80U	0 78U	0 79U	2 6	2.0B	6 2	2.2B	0 82B	0 70B	6 7	4 8	<0 76	3 9	0 96B	1 0B	220
Vanadium	12.5	345	16 8	10.5	26.6	70 5	34.4	2,140	17 2L	2 9B	30 3	31 5	46	22.5	23.3	58 4	55 7	64 4	26 4	194	29 5	28.4	19,648[4]
Zinc	123	469	409	15.0B	163	1,150	43.0	825	808	7 5L	353	280	870	405	120	240	2330	2370	158	2650	206	175	190,000
Cyanide	ND	0 48	0 49	ND	0 32U	2.6L	0 64	2.9	17 4	0 20	<1 1	<1 3	<1 1	2.8	<1 2	<1 2	14 4	4 4	<1 4	9 1	<1 4	<1 3	56,000
Ammonia:																							
Ammonia as N	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46	210	<11	60	51 2	14	<8 2	<8 3	24 2	<7 9	126	120	NSA

Notes:

(1) - All results are in milligrams per kilogram

(2) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act (Act 2), Non-Residential Direct Contact Medium Specific Concentration (August 1997)

(3) - Only those volatile or semivolatile organic and pesticide/PCB compounds which were detected above the method limit are shown

(4) - The current MSC developed for vanadium was incorrectly calculated. The PADEP is aware of this error and is currently reviewing the MSC for vanadium. The MSC listed for vanadium was calculated using the correct toxicological data.

PADEP - Pennsylvania Department of Environmental Protection

NRDC - Non-Residential Direct Contact

MSC - Medium Specific Concentration

J - Compound was detected below the method detection limit and the reported concentration should be considered a quantitative estimate

J - This result should be considered a quantitative estimate

B - (Organics) - This results is qualitatively invalid because the compound/analyte was also detected in a blank at a similar concentration.

B - (Inorganics) - The result is between the estimated quantitation limit and the instrument detection limit

D - Determined in diluted sample

U - This analyte was not detected. The numeric value represents the sample quantitation/detection limit for this analyte.

L - This result should be considered a biased low quantitative estimate

K - This result should be considered a biased high quantitative estimate

ND - Not detected

<0 12 - Compound was not detected above the method limits shown

NA - Not analyzed

NSA - No standard available

UJ - This analyte was not detected. The numeric value that represents the quantitation/detection limit for this analyte is a quantitative estimate

UL - This compound was analyzed but not detected. The numerical value that represents the quantitation limit of the compound is a biased low quantitative estimate

Bold - Compound was detected above its PADEP MSC

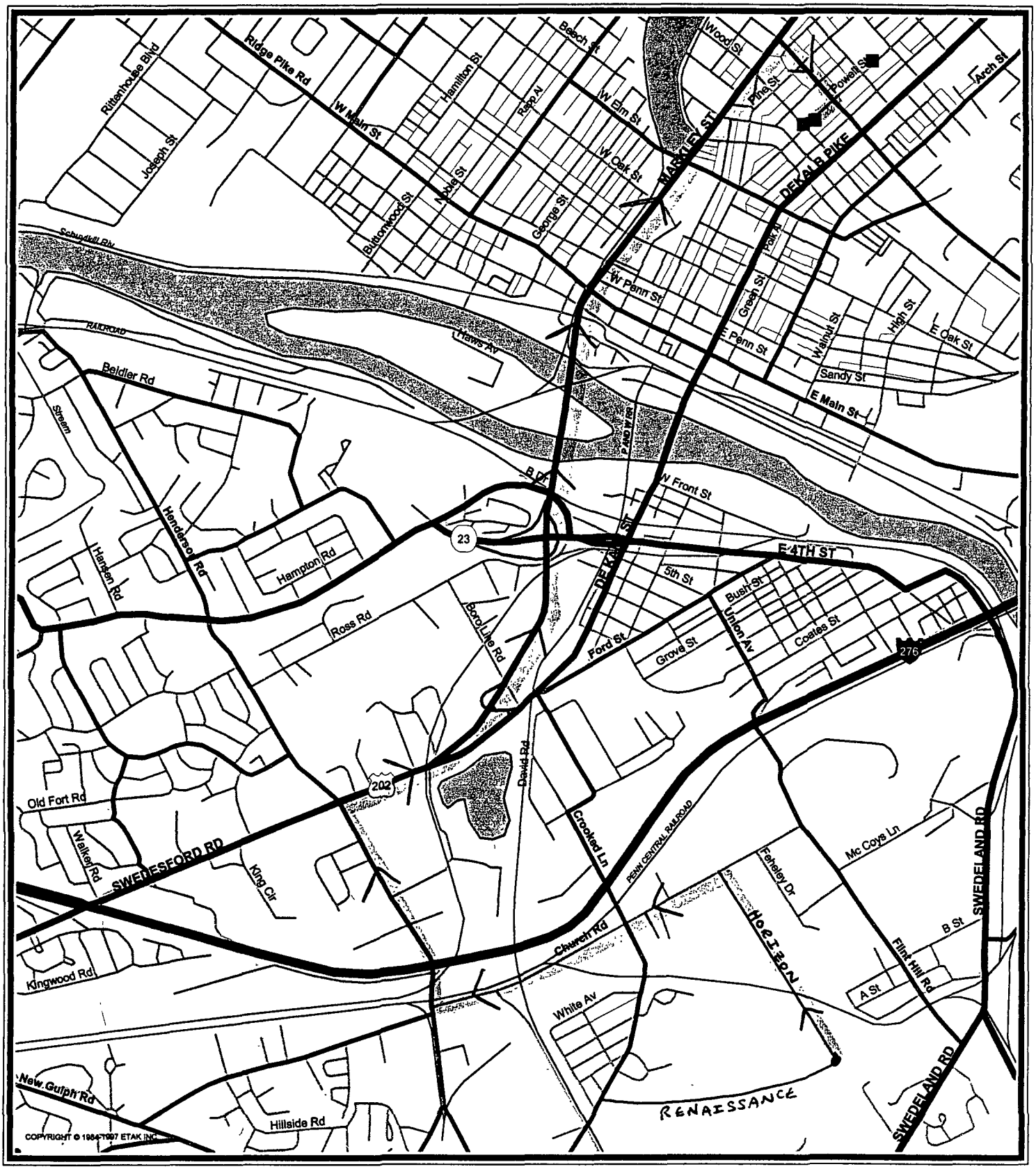
Appendix B

Table 1 Summarizing Soil Sampling Conducted at the Site

Appendix C

Location Map Showing Hospital and Site

Current Map



Appendix D

OSHA PELs for Manganese, Aluminum, Chromium, Iron and Vanadium

Lead was selected as the highest hazard on-site based on concentrations known to be present and its permissible approved level (PEL), which is 50 ug/m3. The metals listed below, which were identified by EPA as possible constituents of concern, have significantly higher PELs than lead, as shown below:

Manganese	5,000 ug/m3
Aluminum	15,000 ug/m3
Chromium	1,000 ug/m3
Iron (oxide fume)	10,000 ug/m3
Vanadium (respirable and fume)	500 ug/m3
Lead	50 ug/m3

Chromium and vanadium were considered during the exposure assessment, as their respective PELs are 20 and 10 times higher than the lead PEL. However, the average and maximum concentrations of these two metals in Quarry No. 4 were less than average and maximum concentration for lead. Therefore, lead, the most toxic metal was used as a baseline, worst case scenario for this assessment. If potential exposure to lead posed no threat of overexposure, the aforementioned metals pose even less of a risk. In addition, lead is the only metal present in the soils within Quarry No. 4 that exceeded PADEP Act 2 non-residential direct contact Medium Specific Concentrations, which are risk based cleanup standards.